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(54) METHOD FOR MAKING ELECTRO-FLUIDIC CONNECTIONS IN MICROFLUIDIC DEVICES

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(57) ABSTRACT

A method for forming electro-fluidic interconnections in microfluidic devices comprises forming an electrical connection between matching bond pads on a die containing an active electrical element and a microfluidic substrate and forming a fluidic seal ring that circumscribes the active electrical element and a fluidic feedthrough. Preferably, the electrical connection and the seal ring are formed in a single bonding step. The simple method is particularly useful for chemical microanalytical systems wherein a plurality of microanalytical components, such as a chemical preconcentrator, a gas chromatography column, and a surface acoustic wave detector, are fluidically interconnected on a hybrid microfluidic substrate having electrical connection to external support electronics.

20 Claims, 6 Drawing Sheets

